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DEEP OPERATIONS: SHOULD WE FIRE OR MANEUVER?

A Monograph

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The purpose of this monograph is to determine if operational fires or operational maneuver should be the primary means of conducting deep operations. Two possible scenarios for an attack against NATO are considered. The first is an attack after complete mobilization. The second is a short notice, 72 hrs, surprise attack. A METT-T analysis of each scenario is done to determine requirements for a deep operational maneuver. Logistics requirements for deep operations in each scenario are then compared to current logistics capabilities.

This study finds that deep operational maneuver is not logistically supportable in the first scenario. However, in the second scenario capabilities meet deep maneuver requirements. The overall conclusion is that niether operational fires nor operational maneuver should hold a dominant position in current doctrine.

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ABSTRACT

DEEP OPERATIONS: SHOULD WE FIRE OR MANEUVER? by MAJ Thomas P. Connors, USA, 40 pages.

Current doctrine considers operational fires as the primary deep strike option. The purpose of this monograph is to determine if operational fires or operational maneuver should be the primary means for conducting deep operations in every situation. Two possible scenarios are considered for a Warsaw Pact attack against NATO. The first scenario is an attack after complete mobilization, consisting of two strategic echelons composed of two operational echelons. The second scenario is a surprise attack after 72 hours of preparation by the Warsaw Pact, consisting of one operational echelon.

Although deep operations are a function of many variables, for the purposes of this study only logistics requirements are compared to logistics capabilities. Specifically, the criteria for determing feasibility is whether or not the deep attack force can be armed and fueled throughout the mission.

The overall approach is to compare logistics requirements for deep attack to current logistics capability to support a deep attack maneuver force. The first step is to look at the theory and doctrine behind deep operations. Next, an examination is made of the enemy situation on which current doctrine is based; the multiple echelon scenario. This is done to determine logistics requirements for deep operational maneuver given this scenario. These requirements are then compared to current logistics capabilities to determine feasibility of deep attack by a specific size maneuver force. Similarly, the surprise attack scenario is analyzed to compare requirements to capabilities. This study finds that deep operational maneuver is not logistically supportable in the first scenario. However, in the second scenario capabilities meet deep maneuver requirements.

The overall conclusion is that niether operational maneuver nor operational fires should hold a dominant position in current doctrine.

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INTRODUCTION

Deep operations seem to fire the imagination with pictures of slashing cavalry charges beyond the depths of the enemy's defenses. The troopers are then free to operate in the enemy's rear area, capturing booty and eventually causing the enemy's defenses to collapse. To the sorrow of today's cavalry, it doesn't quite work that way.

In today's Army, there is a consensus that deep operations are primarily the realm of operational fires. FM 100-5, Operations, states that:

> The primary strike assets for deep attack are aerial, artillery, and missile weapons. However, conventional and unconventional ground and air maneuver units can also interdict enemy movement and neutralize key facilities in depth. (38:24)

Based on this statement, are maneuver forces now relegated to a secondary role in deep operations? Will operational fires be the first choice for deep operations in every situation?

The purpose of this monograph will be to answer these questions by comparing deep operational maneuver requirements for size and depth to current capability. The first step will be to examine current doctrinal concepts of deep operations. This will be done to determine requirements for deep operations and

compare them to the U.S. Army's deep operations capability for heavy maneuver forces. This will be used as a basis of comparison with a threat scenario proposed by C.J. Dick of the Soviet Studies Research Center at Sandhurst and COL David M. Glanz of the Soviet Army Studies Office at Ft Leavenworth. The requirements for deep operations, based on this threat, will then be used to determine if operational fires are still the primary means of conducting deep operations in any scenario.

The criteria for determining capability will be whether or not the deep attack force can be armed and fueled during the mission. Obviously, logistics is only one element of deep operations. Other factors such as command and control and intelligence are just as critical. Logistics has been used simply to demonstrate the impact of a different scenario on deep operations in Europe.

Background.

The U.S. Army's Airland Battle doctrine includes close, rear, and deep operations. The purpose of deep operations as stated in FM 100-5:

> Deep operations at any echelon comprise activities directed against enemy forces not in contact designed to influence the conditions in which future close operations will be conducted. At the

> operational level, deep operations include efforts to isolate current battles and to influence where, when, and against whom future battle will be fought. (19:24)

At both levels deep, operations are attempting to create conditions for victory. At the tactical level, deep operations attempt to create periods of vulnerability so that a current engagement can be won. At the operational level there is a shift in considerations of time, space, and objectives. At this level the purpose is to set the conditions for victory in future battles and ultimately to win the campaign.

The form of these operations may include interdicting the enemy's lines of communication, attacking follow-on forces, and fixing or destroying the enemy's reserves. The desired outcome is to seize and retain the initiative. (19 & 20:24) This can be accomplished by operational fires, opertional maneuver, or a combination of both.

Maneuver forces provide distinct advantages over operational fires. Maneuver forces can adjust to reactions and countermeasures by the enemy. As a result, the requirements for precise intelligence and timing are less than with indirect fire systems. Moreover, direct fire systems can provide precise fires with less high technology guidance systems than

current conventional indirect systems. Their greatest advantage is that maneuver forces do not go away, they can hold ground. The psychological impact on the enemy commander and the requirement to commit resources to deal with a threat to his rear can seriously interfere with his ability to maintain the tempo of his operations. (55:19) Carl von Clausewitz understood the advantages to be gained by deep operations using maneuver forces. In On War he wrote that:

> The risk of having to fight on two fronts, and the even greater risk of finding one's retreat cut off, tend to paralyze movement and the ability to resist, and so affect the balance between victory and defeat. What is more, in the case of defeat, they increase the losses and can raise them to their very limit--to annihilation. A threat to the rear can, therefore, make a defeat more probable, as well as more decisive. (233:1)

During Clausewitz' time, Napoleon best demonstrated the affects of deep operations in his Manoeuvre sur le Derrieres, the most notable example being his victory at the Battle of Ulm.

In more recent history, the advent of armored warfare has brought with it more theory and examples of deep operations. J.F.C. Fuller agreed with Clausewitz that the higher payoff target of maneuver forces and the main effort of any offensive should be the enemy's rear. (96:3) Liddell Hart concurred with

Fuller on this point and felt that the mechanization of warfare increased the criticality of an enemy's lines of communication by increasing dependence on fuel, ammunition, and repair parts. (331:5)

The Soviets built upon these ideas and developed a concept for their implementation. V.K. Triandafillov was the Deputy Chief of Staff for the Red Army and was charged with putting operational art into practice. Consequently, he laid out in detail his theory on successive deep operations. (20:36) These ideas required a completely mechanized force to execute them. From 1931 to 1937 Triandafillov's former superior, M. V. Tukhachevsky directed the development of this force. Its purpose was to conduct successive, deep operations to destroy enemy forces. (23:36)

Niether Triandafillov nor Tukhachevsky lived to see the fruits of their labor. From the Belgorod-Kharkov operation of 1943, until the end of World War II the Soviet Army had conducted over one hundred major operations using deep operations to surround and annihilate the German Army. (42:33)

Much of the Soviet success can be attributed to the hard lessons they learned on the battlefield against the Germans. The Blitzkrieg had embodied the German Army's Kriegsfuehrung or war direction and included the idea of deep thrusts to the enemy's operational depth. The intent was to surround enemy

forces and establish conditions for success in the close battle. Similarly, Field Marshall Heinz Guderian was a strong advocate of deep armor operations, but considered the object of deep operations to be the destruction and paralyzing of the enemy's system of command and control. (142:2)

In theory and practice, deep operations are nothing new. They are as old as the argument of attrition versus maneuver warfare. Today the argument continues whether or not deep operations should take the form of attrition by operational fires or maneuver to knock the enemy commander off his operational plan.

The Problem.

There is a growing consensus that deep attack by maneuver forces is considered too difficult. One of several reasons for this position is that logistics capabilities do not meet requirements to rearm and refuel maneuver forces conducting deep operations.

Current U.S. Army concepts of deep operations as outlined in FC 100-15-1, Corps Deep Operations, indicate that deep operations will usually be conducted by a division or larger size force. (2-16:22) The force will have to move a distance usually in excess of 150 kilometers. (5-22:29) Simulation results and other sources argue that there

is not enough resupply capability at corps to support fuel and ammunition requirements for a division attacking to the enemy's operational depth. This provides another reason why operational fires are considered the primary means of deep attack.

These difficulties are very real if one considers the enemy scenario that they are based on. Deep operations in the European application of the U.S. Army's AirLand Battle doctrine are based on a Soviet attack consisting of two strategic echelons each composed of two operational echelons. Based on this threat the distance required to reach the enemy's operational depth becomes extreme. Moreover, the size of the formations that would be the target of deep operations will be too large for even a division size maneuver force to handle. But what if this scenario is not what the Soviets plan to do?

Recent studies by Soviet Army experts such as C.J. Dick and COL David M. Glantz indicate that the threat that this scenario is based on has changed. They argue that a more likely threat scenario will be a surprise attack against NATO by the Warsaw Pact using one operational echelon in the initial stages of a war in Europe. This would be done specifically to reduce their vulnerability to NATO's nuclear weapons and growing deep attack capability. Moreover, C.J. Dick feels that a surprise, single echelon attack, before

NATO forces have fully deployed to the GDP, gives the Soviets two additional advantages. First it will allow them to more easily conduct their own deep operations with operational maneuver groups and secondly it will allow them to fight the battle they have always trained for; the meeting engagement. (902:13)

If the scenario proposed by C.J. Dick and COL Glantz is a more accurate assessment of Soviet intentions, then it could have a significant impact on the U.S. Army's capability to conduct deep operations with heavy maneuver forces. Based on this scenario, would our capability to logistically support deep maneuver equal the requirements for fuel and ammunition? If so what is the impact on the doctrinal statement that operational fires are the primary asset for deep attack?

CURRENT SITUATION

Current doctrinal concepts for deep operations like any operational concept, include an analysis of mission, enemy, troops available, terrain, and time (METT-T). At the operational level of war determining the mission involves an analysis of complex situations in order to correctly designate objectives that lead to the accomplishment of strategic aims. It also involves fitting means to the operational mission, which may or may not be heavy maneuver forces. Terrain analysis is different at the operational level and usually involves much larger areas or depths. And finally, time spans at the operational level are much longer and require the commander to consider operations days, weeks, or months in advance. All of these factors must be carefully analyzed in order for the commander to determine the necessary requirements to set the terms of battle and determine where and when he wants to fight. (6:35)

Requirements:

A METT-T analysis has been done for deep operations. FC 100-15-1, Corps Deep Operations, includes missions, an enemy situation, force requirements, and terrain analysis for deep

operations. These apply to corps and echelons above corps.

The mission in FC 100-15-1 is defined in terms of an overall objective with deep operational targets that support the objective. The objective of deep operations is to alter the tempo at which follow on forces might be committed. By altering the enemy's tempo, freedom of action is provided to conduct close operations on our terms. (2-2:22)

Current concepts of deep operations are based on a specific enemy scenario. The threat is a Soviet attack consisting of two strategic echelons, each composed of two operational echelons. FC 100-15-1 is based on this threat scenario and considers echelonment essential to maintaining the tempo of Soviet forces. This tempo is essential in order to rapidly concentrate superior combat power at the decisive point. Failure to do so would leave there dense troop formations vulnerable to NATO nuclear attack. (1-4:22) In fact the idea that the Warsaw Pact will attack in echelon is the original reason for current concepts of deep operations.

This concept was originally envisioned by General Donn A. Starry. According to him, 'The existence of these follow-on echelons gives the enemy a strong grip on the initiative which we must wrest from him and then retain in order to win.' (34:20)

Given this enemy scenario and the mission as stated in FC 100-15-1, a suitable friendly force is necessary to execute deep operations. How big a force is necessary? Size of the force is a function of many variables, not the least of which is the operational objective. However, FC 100-15-1 has again provided an answer. The force should be at least division size in order to present a significant threat to the enemy's follow on divisions. (2-16:22)

Another critical element of this situation is terrain. In this case the most important consideration being how much terrain the above force will have to cover to reach the enemy's operational depth. First, we must define operational depth and then determine distance by applying this definition to the previously established enemy situation.

For purposes of this study an attacking force will have reached the enemy's operational depth once it has penetrated through the enemy's entire tactical depth. Therefore, the following definition will be used:

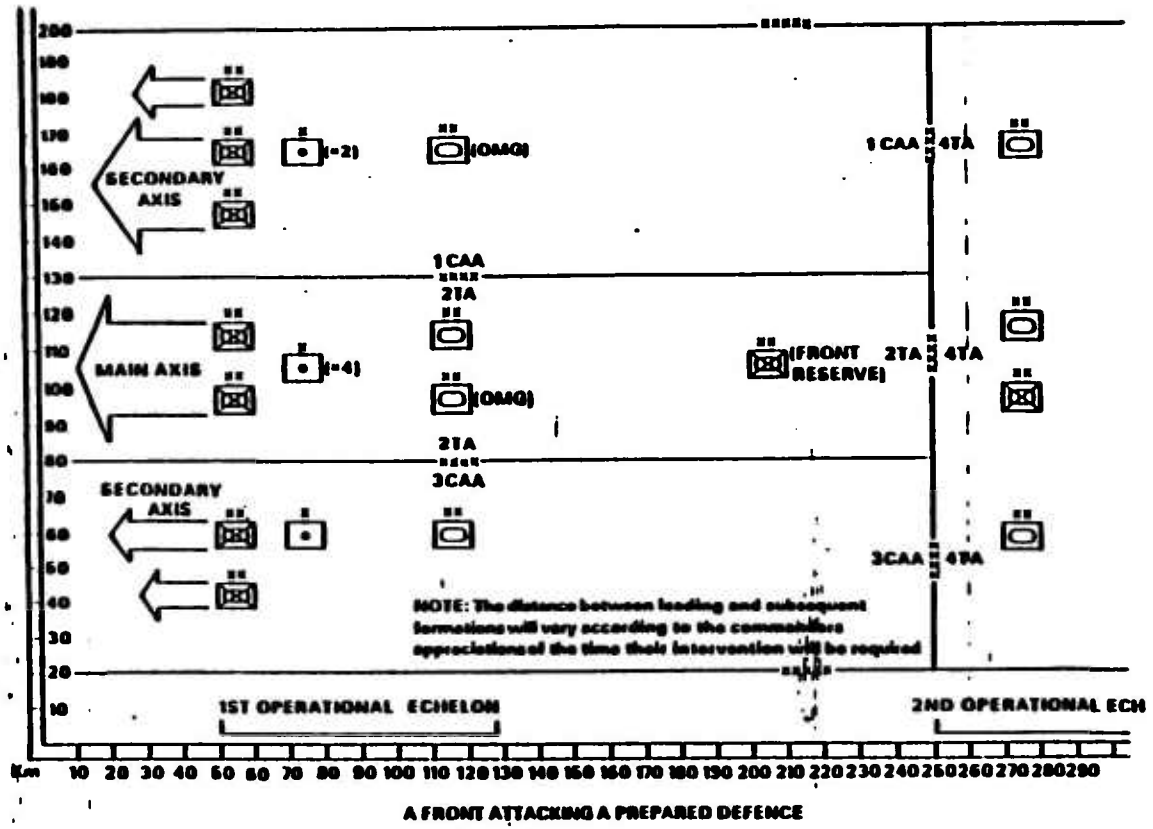
> Operational depth is that area beyond tactical depth in which both defender and attacker can achieve freedom of maneuver, and if gained by the attacker provides the opportunity to destroy or disrupt the defender without engaging the majority of the defenses. (3:32)

Based on this definition of operational depth and the enemy scenario in FC 100-15-1, a determination can be made as to how deep a force would have to go to

conduct operational maneuver. In this case a Soviet front arrayed in two operational echelons is conducting an attack against NATO's prepared defensive positions. Width and depth of the attack are depicted in Figure 1. (5-22:29) A deep attack force would have to penetrate the enemy's tactical depth consisting of the 1st operational echelon in order to reach the enemy's operational depth. Therefore, if deep operations are to be conducted by a maneuver force, the force would have to travel between 130 to 250 kilometers to attack the enemy's second operational echelon.

To summarize, the requirements outlined in current doctrine at the tactical level and as they apply at the operational level are to conduct deep operations to delay, disrupt, or destroy enemy follow on forces or interdict lines of communication. This requires an attack to penetrate the enemy's tactical depth and move from 130 to 250 kilometers to attack the enemy's second operational echelon with at least a one division size force. The inherent requirement is to resupply this force throughout its mission. The unknown requirement is the time needed to execute a deep operation within these parameters.

The amount of time required to conduct this attack is uncertain. One estimate by LTC William A. Brinkley is seven days, based on the Israeli experience of deep



A FRONT ATTACKING A PREPARED DEFENCE

FIGURE 1. (5-22:29)

operations across the Suez Canal during the 1973 Arab Israeli War. Based on the requirements already outlined, his calculations for resupplying such an operation raise some interesting questions about the U.S. Army's capability to execute deep operations. (3:30)

Capability:

Do we have the capability to conduct deep operations with maneuver forces? We have some historical examples to help answer that question but no recent experience to go on. One thing is certain, our ability to conduct deep operations is a function of our logistics capability.

Brinkley's study considers supply requirements for a deep operation by a division. His calculations are based on the requirement for a U.S. heavy division to attack to a depth of 150 kilometers. (ii:30)

All classes of supply were considered, but for the purposes of this study only the figures for Class III, petroleum, oil, and lubricants (POL), and Class V, ammunition will be considered. It should also be noted that his source for making these calculations is FM 101-10-1, Staff Officers' Field Manual: Organizational and Logistics Data, from 1978. A more recent version has been published and calculations

using it are similar but do not always agree with the older version.

Brinkley considers Class III requirements to be the greatest logistical problem for a division going deep. The fuel requirements, Figure 2, are based on an M-1 and M-2 equipped force with a requirement to refuel twice every 24 hours.

Tank Bn, Mech Inf Bn and Armored Div
(6 Tank and 5 Mech Inf Bns) Diesel Requirements
(Moderate Combat for Seven Days)*

Req't	M1 Bn	M2 Bn	Total Regt
Gal/hr	2538	593	18193
Gal/day	50760	11860	363860
Gal/msn	355320	83020	2547020

*Assume average 20 hours of operation per day (9:30)

Figure 2.

This would require 8900 short tons or 2,547,020 gallons of fuel to be delivered to the division forward of the FLOT. This translates into a requirement for 1414 five ton trucks with trailers just to bring forward the required diesel fuel. (33:30)

The situation for Class V is not much better. The calculations are based on three days of intense fighting, three days of moderate fighting, and one day of light fighting by all battalions. The short ton requirements are listed at Figure 3.

Estimated Class V Resupply Requirements
For An Armored Division in a 7 Day, OMG Scenario

Type of Conflict	Req'd STON / Day	Req'd STON/Msn
Intense Combat	2007	6021
Moderate Combat	1496	4486
Light Combat	1222	1222
Total for Msn		15232

(13:30)

Figure 3.

To move this requirement the division would need at least 1243 five ton trucks with trailers loaded to 200% and 150% respectively.

When these requirements are compared to line haul capability in the division, deep operations become a logistically impossible mission. Figure 5 shows short ton and gallon requirements compared to a divisions lift capability.

Estimated Arm Division Class III and
V Resupply Requirements for 7 Day, 350 KM OMG Msn

Unit Providing Lift Capability	Class III (Gals) Lift	Class III (Gals) Reqt's	Class V(STON) Lift	Class V(STON) Reqt's
11 Maneuver Bns (Support Plts)	45000	2547020*	234	4570
Discom Trans Assets	160000	502040**	360	10662

*Diesel Only
**Diesel, MOGAS, JP4
(17:30)

Figure 4.

The bottom line is that a division could sustain

itself for only one day unless reinforced with considerable transportation assets from the COSCOM or army group assets. Based on these calculations, Brinkley concludes that the U.S. Army does not currently have the means to accomplish an operational mission involving deep attack with heavy maneuver forces.

The correct application of operational art will allow a commander to set the terms of battle. This involves fitting means to the operational mission. In this case an enemy scenario involving two operational echelons is driving the requirements for deep operations. The requirement is to attack with at least one heavy division to a distance of at least 130 kilometers. Logistic calculations seem to indicate that we could sustain such an attack with division assets for no more than a day. The means do not meet mission requirements for this scenario.

However, what if the assumptions about the threat are wrong? How would that impact on requirements and capabilities to conduct deep operations with current heavy maneuver forces?

A DIFFERENT SITUATION

> In essence what has emerged is a Soviet concept juxtaposed against the US concept of Airland battle. (34:16)

There has been an ongoing debate on how the Soviets will attack NATO. There are two schools of thought. One is that the Soviets will launch an attack after completing a full mobilization. In this case the enemy situation previously discussed would probably apply; use of two operational and strategic echelons to maintain the tempo of operations. The second scenario would involve a surprise attack with little or no warning for NATO, sometimes referred to as the 'bolt out of the blue' scenario. Several highly regarded Soviet experts consider the latter to be the most likely case.

Why the Soviets would want to execute a no notice scenario is based on what they consider to be prerequisites for operational victory. How they would do it is open to debate but a thorough study by COL Glanz provides a detailed scenario on which to base a METT-T analysis. First I will consider the why and the how of a no notice attack scenario and then consider the requirements for a heavy maneuver force to conduct deep operations against such an attack. Specifically, fuel and ammunition requirements will be considered, based on the size of the force and the

depth of the deep operation. Logistics capability will then be compared to these requirements to determine feasibility.

The Soviets consider seven prerequisites for victory in an offensive campaign against NATO's central region. They include surprise, strength, high speed advance, attack in depth, combined arms, air superiority, and command and control. A no notice attack provides significant advantages in all of these areas but particularly for surprise, strength, high speed advance, and attack in depth. (902-905:13)

Surprise is critical to any Soviet operation and holds a dominant position among the seven. It offers several key advantages against NATO. If surprise could be achieved at the strategic and operational levels it could catch NATO forces enroute to their general defensive positions, GDPs. Ideally this would result in a series of meeting engagements or encounter battles. The Soviets would consider this fighting on their terms since they train intensively for the meeting engagement. (902:13)

Additionally, surprise is seen as a means of gaining the initiative. This is considered a key force multiplier that can allow smaller forces to achieve operational objectives even when attacking a larger force. Moreover, the opportunity to use a smaller force reduces dependence on subsequent

echelons. As a result, Warsaw Pact forces would be less vulnerable to NATO's growing deep attack technology. (901:13)

Finally, surprise facilitates deep operations by Soviet operational maneuver groups by eliminating the requirement for them to penetrate an established NATO defense. This would be true for most forces in the close battle and would have the additional benefit of reducing logistical requirements. (901:13)

The Soviets recognize that surprise is essential, but current systems for strategic and operational reconnaissance make surprise much more difficult. Therefore, their means of political and military deception or Maskirovka, are of greater importance than ever. Maskirovka involves a variety of measures and disinformation of all types. One measure is to exploit NATO's stereotyping of how the Soviets will fight. They will seek to convince us that we are correct in assuming a full mobilization period followed by a massive attack in multiple tactical, operational and strategic echelons. They will then be able to capitalize on these misconceptions and attack in a manner we least expect. For NATO this would be a no notice attack with currently deployed forces in one operational echelon. (51-57:17)

The Soviets consider strength to be the second prerequisite for operational victory. The strength of

their forces must be sufficient to achieve strategic objectives without an operational pause. Moreover, it must be positioned forward to insure surprise. To achieve this superiority they require a 2 to 1 overall force advantage in the theatre, a 4.5 to 1 superiority on the main axis, and only require parity in the meeting engagement.(902:13) A surprise attack will allow them to achieve these force ratios. In the scenario which will be outlined later the overall force ratio for Soviet attack after full mobilization and reinforcement on both sides is 2.4 to 1 in the Soviet's favor. In a surprise attack the Soviets can achieve an overall force ratio of 3.0 to 1. (6:34)

The more favorable force ratios in the surprise attack provide several operational advantages. It allows the Soviets to advance on multiple routes to complicate our commitment of army group and theater reserves. It also allows the Soviets to conduct simultaneous envelopments of forces still enroute to their GDPs. And as previously mentioned, this amount of initial strength eliminates the need for a second operational echelon to maintain the tempo of operations. Strength is a function of surprise that allows the Soviets to set the terms of battle. (902:13)

Operational victory for the Soviets requires a high speed advance that obviates NATO's nuclear

option. To this end they want to avoid a slow battle of attrition and move rapidly to the rear of NATO's defenses. To do this they must set the terms of battle by choosing when and where they will fight.

> To this end they will eschew all unnecessary battles: Soviet formations do not move in order to fight, as their NATO counterparts do; rather they fight in order to be able to move.(902:13)

High speed advance will give the Soviets the advantage of keeping the enemy reacting. As a result, they will be able to maintain the initiative. Moreover, it can significantly disrupt command and control when headquarters locked into a GDP scenario will have to start thinking about how to conduct an operational meeting engagement in the middle of an already chaotic combat situation. Finally, and most significantly for the Soviets, a rapid advance shortens the time for NATO to decide to go nuclear. All of these advantages are multiplied in a surprise attack scenario.(902 & 903:13)

The final Soviet prerequisite for operational victory that will be considered is attack in depth. As previously mentioned, a surprise Soviet attack facilitates the mission of the operational maneuver group by allowing it to take advantage of gaps in NATO's defenses and attack to operational depth

without the requirement for a tactical breakthrough. As a result, several deep missions can be accomplished rapidly. The highest priority mission would most likely be the destruction of NATO's nuclear capability. This would be followed by political and economic objectives such as seats of government or major power stations. Ports and airfields would also be prime targets to prevent reinforcement by REFORGER units. Additionally, command and control headquarters could be attacked sooner with the resulting disruption of command and control. All of this designed to throw the allies off their campaign plan and all of it accomplished by operations in depth, made easier by a surprise attack. (904:13)

Surprise, strength, high speed advance, and attack in depth are combined in the Soviets overall concept of the operational level of war. It is at this level that the Soviets feel they have a greater understanding of war.

All of this sounds good in theory. What would it look like in practice? A possible scenario has been developed by Glantz. His situation is based on a Soviet attack against NATO after 72 hours of Warsaw Pact preparation and 24 hrs of NATO preparation. The scenario involves the use of deception, such as a arsaw Pact exercise to conceal changes in command and control, regrouping of forces, movement of

reinforcements, and the location of the main attack zones. The reinforcement of forward area forces would be accomplished at night during the first 48 hours, or from H-72 to H-24. This would only involve one or two divisions. Six East German divisions would also be used. Regrouping and changes in command and control would result in a three front TVD command consisting of nine armies on D-Day. (See Map 1, Annex A) Three additional armies would be formed between D+1 and D+2. However they would remain in position to protect East Germany from attack and would not be used as a second operational echelon. (See Map 2, Annex A)

The overall concept would be an attack on a broad front with the use of only one operational echelon. In most sectors this would only be one division deep. (See Map 2, Annex A) Additionally, forward detachments and OMGs would be used as the situation developed and gaps in NATO's defenses became evident.

Soviet/Warsaw Pact forces would begin their move to attack positions at H-24. Glantz assumes they would be detected and that NATO would begin to react after 24 hours. This would result in NATO only having enough time to have covering forces in position and some elements of the most forward divisions in their GDP positions when the Warsaw Pact forces cross the IGB. The result would be non-linear, open warfare and an operational level encounter battle or meeting

engagement.

Given current capability to conduct an encounter battle, the NATO situation would probably be chaotic. Therefore, several assumptions must be made in order to develop a friendly situation for this scenario. First, it is assumed that NATO has developed a campaign plan that includes a branch for defending against a surprise attack. Units that could deploy quickly to the GDP, i.e. cavalry regiments, are conducting covering force battles on their GDPs or meeting engagements short of their GDPs. Other units are executing the branch of the NATO campaign plan that requires them to move to emergency defensive positions short of their GDPs. The majority of units have occupied these positions and are defending prior to deep operations by maneuver forces.

Given this situation, what are the requirements for deep attack by heavy maneuver forces? This will be determined by looking at depth and objective for a force conducting deep operational maneuver against the previously outlined single echelon attack.

Requirements.

Given a short warning scenario, an analysis of requirements for deep operations should begin with the mission or purpose of deep operations. At the

tactical level, the purpose of deep operations is to insure an advantage in the current close engagement. At the operational level, deep operations are conducted to establish conditions for winning future battles.

In a short notice scenario the Warsaw Pact, attacking in a single operational echelon, one division deep, will be executing an operational level meeting engagement. The only forces available to exploit the meeting engagement are the follow-on regiments of the divisions forming the enemy's single operational echelon. Disrupting, delaying, or destroying these follow-on regiments would degrade the enemy's capability to exploit success in an operational level meeting engagement. Therefore, attacking these regiments with maneuver forces would accomplish the purpose of deep attack at the operational level by establishing conditions for success for NATO forces in the future operational meeting engagement. Deep operations would still take the form of interdicting the enemy's lines of communications, attacking follow on forces, and fixing or destroying the enemy reserve. In most cases, the lines of communication to be interdicted now become the division LOCs, the follow on forces to be attacked become the division's second echelon regiments, and the reserve to be fixed or destroyed becomes the

enemy's divisional reserve. The purpose of deep operations has not changed in this scenario, however the operational level targets to be attacked and operational depth have changed.

The enemy situation in this scenario significantly changes operational depth. For example, if a U.S. cavalry regiment was conducting a covering force battle with the lead regiments of a Soviet division, the second echelon regiment would be 5 to 15 kilometers behind the regiments in contact. (5-20:23) The division logistics would be 15 to 20 kilometers beyond the main force. (5-3:23) A maneuver force conducting deep operations to isolate the cavalry's fight with the lead regiments would have to move to a depth of 5 to 25 kilometers. This is a significant change from the original scenario's depths of 130 to 250 kilometers.

Based on the mission of interdicting enemy LOCs or attacking his follow on forces, what size force would be adequate? Assuming the largest formation the deep force would have to fight is a regiment, a U.S. heavy brigade would be sufficient. However, a smaller force could be used to interdict the enemy's LOCs or to attack specific systems such as command and control or air defense artillery. These targets may only require a reinforced battalion.

Time in this scenario has also changed

considerably. Assuming the enemy is being fixed by another unit conducting a meeting engagement, the deep attack force could move relatively unopposed. Based on LTC Brinkley's fifty kilometers a day for a typical mission profile, an M-1/M-2 equipped force could move to the required depths in less than a day, and probably complete its mission within two days.

The requirements, based on METT-T for this situation, can be summarized as a force no larger than a brigade, attacking to a depth of not more than 25 kilometers, and conducting operations over a three day period. Based on this, fuel and ammo requirements can be determined.

Class III will still present the greatest logistical challenge. Using the current FM 101-10-1/1, October 1987, the fuel requirement for an armor heavy brigade of two tank battalions and one mechanized infantry battalion are as follows.

Brigade Diesel Requirements
(2 Tank, 1 Mech Bns, 3 Days Moderate Combat)*

Required	(2X) M-1 Bn	M-2 Bn	Total Req
Gal/day	78,720	17,178	95,898
Gal/msn	157,440	34,356	191,796

Figure 5.

Class V requirements will still pose the greatest

short ton haul requirements for the deep attack force. Again using the new FM 101-10-1/1 the requirements for two days of offense are as follows.

Brigade Ammunition Requirements
(2 Tank Bns and 1 Mech Bn, 2 Days of Offense)*

Required	(2X) M-1 Bn	M-2 Bn	Total Req
S-tons/day	198.4	58.8	257.2
S-tons/msn	396.8	117.6	514.4

(Based on Heavy Division Armor (87000J430), using percentages of all ammunition types that would be used by an M-1 or M-2 equipped battalion.)

Figure 6.

Based on this scenario, the requirements to conduct deep attack have changed considerably. They must still be compared to the capability to haul the required fuel and ammunition.

Capability.

The following table is an estimate of requirements for fuel and ammunition only, compared to the capability of a division to haul this requirement. The estimates in Figure 7 are based on a brigade size force. It is assumed that this brigade would be part of a division that is in army group reserve with a mission to conduct deep operations.

Class III & V Requirements vs. Haul Capability

Hauling Unit	Class III		Class V	
	Cap.	Req.	Cap.	Req.
3 Support Plts. & Discom Assets	222,600	191,180	1,368	515

Figure 7.

Lift capability is based on what is available in each of the battalion support platoons and Discom assets. The support platoon fuel carrying capacity varies from tank to mechanized infantry battalions. In this case an M-1 battalion has twelve 2500 gallon fuel trucks with a total capacity of 30,000 gallons. The infantry battalion has seven 5 ton tank and pump units with trailers. Each truck can carry 1800 gallons for a total capability of 12,600 gallons. The Discom assets include ten 5000 gallon tankers in each forward support battalion for a total of 50,000 gallons. The main support battalion can haul an additional 100,000 gallons in one trip. Total fuel carrying capacity for the force would be 222,600 gallons. (5-6 & 5-13:21)

Short ton haul capacity is also based on assets in each support platoon and the Discom. The support platoon of the tank battalion has ten 8 ton cargo trucks with an 11 ton capacity, for a total of 220

STONS for the two battalions. The infantry battalion has twenty seven 5 ton trucks for a total haul capability of 148 STONS. The additional line haul capability from the Discom includes 250 STONS for the light truck company, 725 STONS for the medium truck company, 1800 STONS for the heavy truck company. It will be assumed that the heavy truck company would not be available because of their requirement to haul replacement tanks or infantry fighting vehicles for the division. As a result, the total line haul capability for the force would be 1,368 STONS. (5-6 & 5-13:21)

Based on these calculations, capabilities meet the requirements to support deep operations using a brigade size heavy maneuver force.

Current concepts of deep operations are based on the commonly accepted enemy situation of two operational echelons. As shown, the METT-T analysis of this situation presents tremendous challenges to deep operational maneuver. One of the greatest challenges, though certainly not the only one, is the sustainment of the deep attack force. It can even be argued that deep operational maneuver may not be possible with current logistics capability, hence the statement in FM 100-5 that deep attack will be conducted by aerial, artillery, and missile weapons.

However, a change in the enemy situation can impact on all elements of deep operations and particularly on logistics. If a change occurs, as outlined by C.J. Dick and Glantz, it may make deep operations logistically feasible. Moreover, in COL Glantz's scenario deep maneuver may be preferable to deep fires as most indirect systems may have greater impact on close operations.

CONCLUSIONS

Deep operations are nothing new. The idea behind it is as old as the idea of maneuver. Historically, deep operations have usually been conducted by maneuver forces. In today's doctrine the purpose is to delay, disrupt, or destroy uncommited forces in order to set the terms of battle for close operations. This can take the form of interdicting the enemy's lines of communications, attacking second echelon forces, or fixing or attacking his reserves.

Today, developing deep attack technology is improving our capability to conduct deep attack using operational fires. The desire to rely on firepower to get the job done and the difficulties of maneuvering heavy forces deep has led to the doctrinal conclusion that deep attack is primarily the realm of the artillery and the Air Force.

This argument is supported by an enemy scenario that forms the basis for AirLand Battle. This is an enemy attack based on two strategic echelons, each composed of two operational echelons. In this situation, the depth of operational deep attack will probably exceed 130 kilometers. If the target is enemy forces, doctrine recommends the size of the attacking force should be atleast a division size

force. The problem with this situations is that logistics capability to rearm and refuel such a force going to operational depth do not meet current resupply capability.

But what if a two echelon attack is not what the Warsaw Pact plans to do? C.J. Dick and COL David Glantz agree that a short notice, single echelon scenario is possible. Such an attack would achieve Soviet prerequisites for operational victory, especially by providing surprise, improved force ratios, high speed advance, and the ability to conduct their own deep operations. This scenario allows them to set the terms of battle by forcing NATO to fight an encounter battle. However this scenario also alters deep attack requirements for U.S. ground maneuver forces. In the area of logistics, the requirements to rearm and refuel match capabilities.

A change in the enemy situation from a full mobilization to a no notice attack scenario can significantly change the conditions for deep operations. Logistics is one of many variables that could be greatly changed.

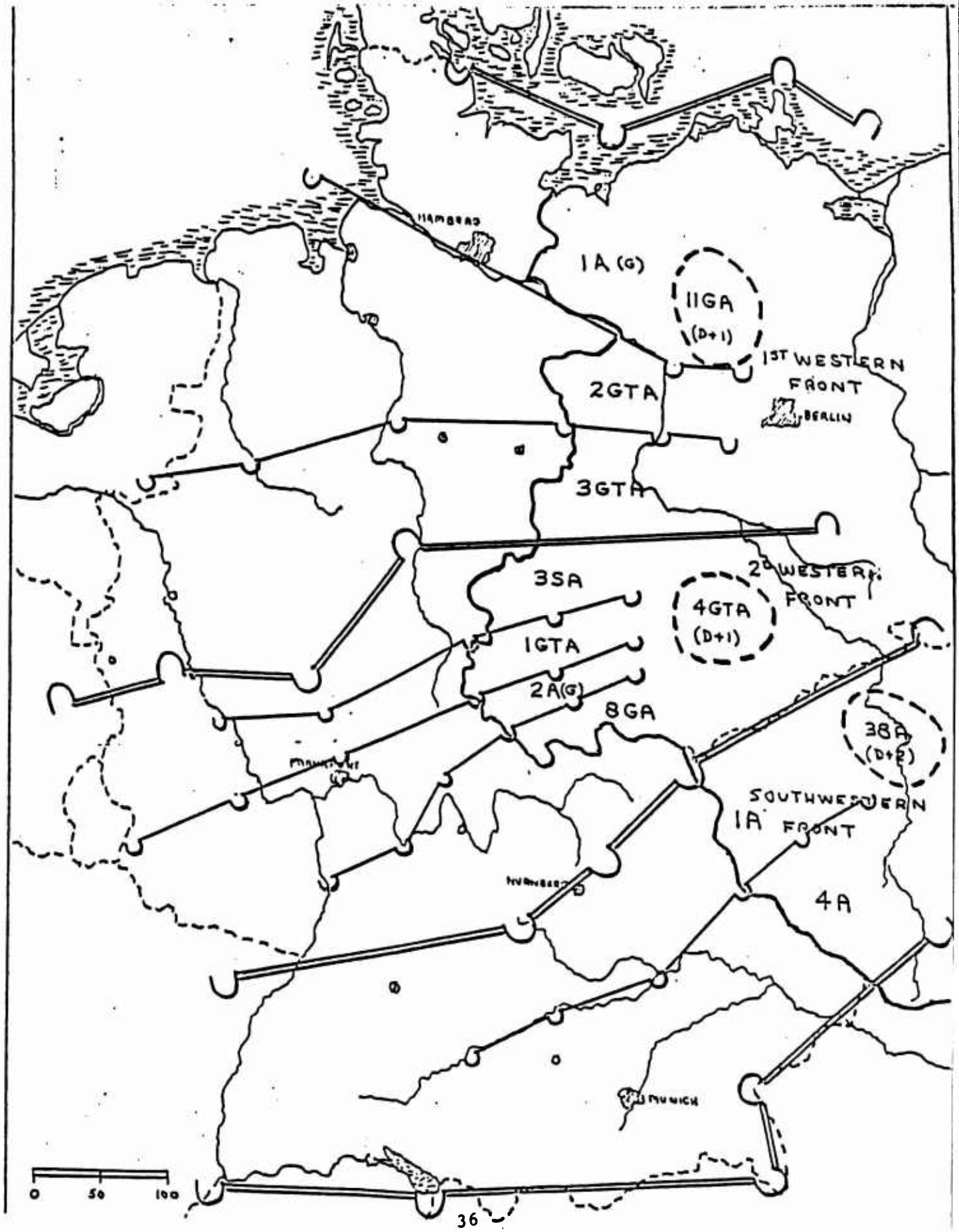
Focusing our doctrine on a single enemy scenario can limit operational planning. The British Army found this to be true when developing an operational concept to retake the Falkland Islands in 1982. They discovered that, 'This war has shown us how dangerous

it is for our defences to become too scenario oriented.' (161:4)

The Soviets have always shown great flexibility in echelonment of forces. Therefore, NATO must be prepared to show equal flexibility in developing a campaign plan. If a campaign plan is developed, it must include branches that allow for changes in Soviet echelonment and consequently, changes in operational depth and targets based on a surprise attack scenario. Similarly, U.S. doctrine should be flexible enough to consider neither deep fires nor deep maneuver as 'The primary strike asset for deep attack...'(38:24) The capabilities of each will depend on how the Warsaw Pact attacks. Deep fires and deep maneuver should then be used appropriately in each situation to compliment each other. Neither should hold the dominant position in our doctrine.

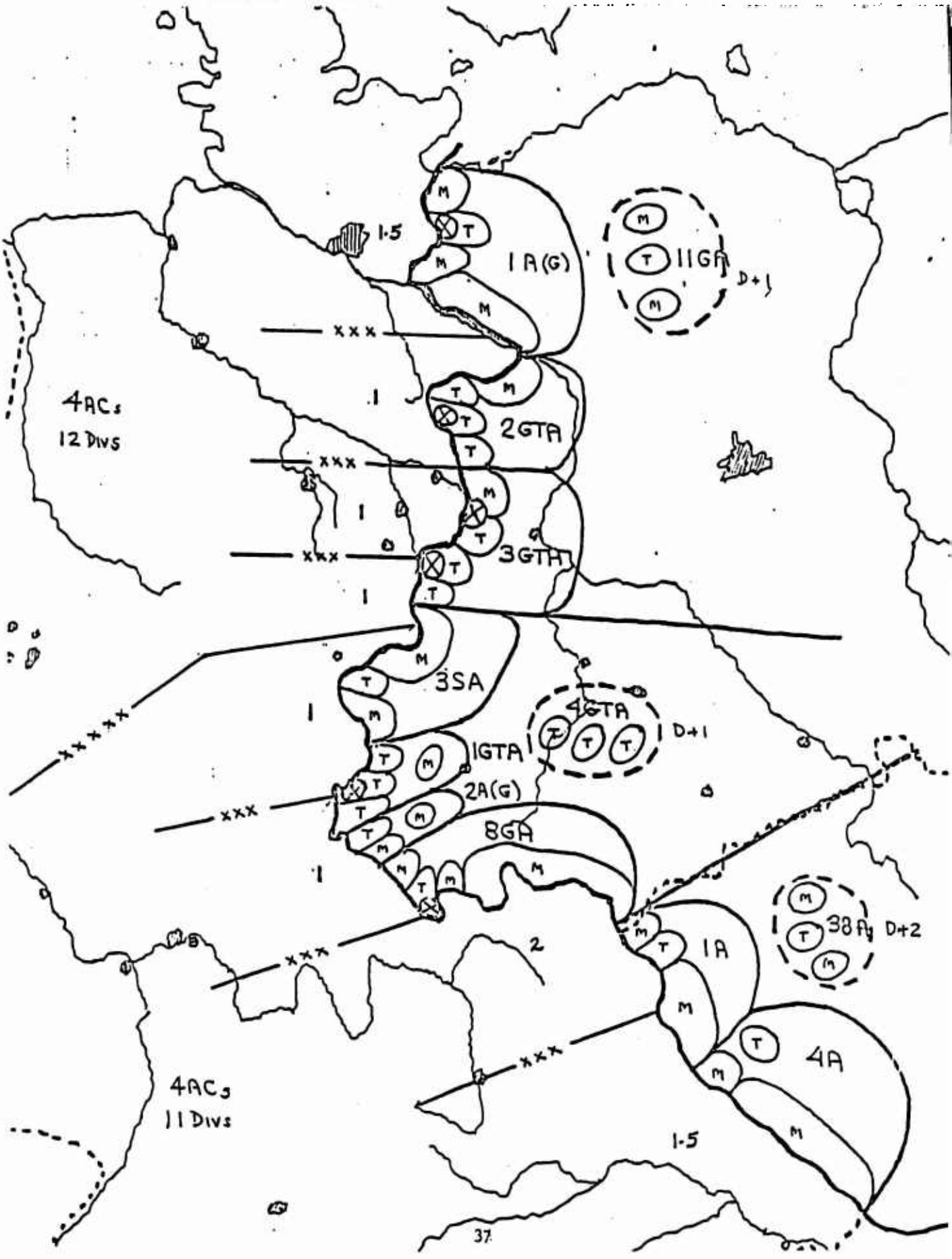
ANNEX A: Map 1 (6:34)

OPERATIONAL FORMATION: FRONTS



ANNEX A: Map 2 (7:34)

WARTIME FORMATION - WITH DECEPTION



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